



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : H01S 3/10	A1	(11) International Publication Number: WO 00/49689 (43) International Publication Date: 24 August 2000 (24.08.00)
<p>(21) International Application Number: PCT/US00/04196 (22) International Filing Date: 18 February 2000 (18.02.00) (30) Priority Data: 60/120,780 19 February 1999 (19.02.99) US 09/342,342 29 June 1999 (29.06.99) US 60/152,042 2 September 1999 (02.09.99) US 09/418,950 15 October 1999 (15.10.99) US PCT/US99/24137 15 October 1999 (15.10.99) US <i>G 108355</i> <i>62 6215</i> </p> <p>(71) Applicant (<i>for all designated States except US</i>): NEW FOCUS, INC. [US/US]; 2630 Walsh Avenue, Santa Clara, CA 95051-0905 (US).</p> <p>(72) Inventors; and (75) Inventors/Applicants (<i>for US only</i>): ZORABEDIAN, Paul [US/US]; 2441 Benjamin Drive, Mountain View, CA 94043 (US). CHAPMAN, William, B. [US/US]; 421 S. Pastoria Avenue, Sunnyvale, CA 94086 (US). GREEN, Evan, D., H. [US/US]; 766 Coffeewood Court, San Jose, CA 95120 (US). JENQ, Michael, Y. [US/US]; 18339 Clemson Avenue, Saratoga, CA 95070 (US).</p> <p>(74) Agent: CARY, Charles, C.; Cary & Kelly, LLP, 1875 Charleston Road, Mountain View, CA 94043 (US).</p>		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
<p>Published <i>With international search report.</i></p> <p>(54) Title: TUNABLE LASER TRANSMITTER WITH INTERNAL WAVELENGTH GRID GENERATORS</p> <p>(57) Abstract</p> <p>The present invention provides a continuously tunable external cavity laser ECL with a compact form factor and precise tuning to a selected center wavelength of a selected wavelength grid. The ECL may thus be utilized in telecom applications to generate the center wavelengths for any channel on the ITU or other optical grid. The ECL does not require a closed loop feedback. A novel tuning mechanism is disclosed which provides for electrical or mechanical tuning to a known position or electrical parameter, e.g., voltage, current, or capacitance, with the required precision in the selected center wavelength arising as a result of a novel arrangement of a grid generator (226) and a channel selector (262). The grid generator (226) exhibits first pass bands which correspond to the spacing between the individual channels of the selected wavelength grid and a finesse which suppresses side band modes of the laser. The channel selector (262) exhibits second pass bands that are wider than the first pass bands. In an embodiment of the invention the second pass bands have a periodicity substantially corresponding with the separation between the shortest wavelength channel and the longest wavelength channel of the selected wavelength grid and a finesse which suppresses channels adjacent to the selected channel. The broad second pass bands of the channel selector reduce the sensitivity of the ECL to tuning variations about the selected channel, thus avoiding the requirement of a closed loop feedback system to control the channel selector (262).</p>		

